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Joint Polar Satellite System (JPSS) Algorithm Specification Volume I: Software Requirement Specification (SRS) for the Vegetation Index

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National Aeronautics and
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Goddard Space Flight Center
Greenbelt, Maryland

Joint Polar Satellite System (JPSS) Algorithm Specification Volume I: Software Requirement Specification (SRS) for the Vegetation Index
JPSS Review/Approval Page

Prepared By:

JPSS Ground System
(Electronic Approvals available online at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm)

Approved By:

Robert M. Morgenstern Date
JPSS Ground Project Mission Systems Engineering Manager
(Electronic Approvals available online at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm)

Approved By:

Daniel S. DeVito Date
JPSS Ground Project Manager
(Electronic Approvals available online at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm)

Goddard Space Flight Center
Greenbelt, Maryland

Preface

This document is under JPSS Ground Project configuration control. Once this document is approved, JPSS approved changes are handled in accordance with Class I and Class II change control requirements as described in the JPSS Configuration Management Procedures, and changes to this document shall be made by complete revision.

Any questions should be addressed to:

JPSS Configuration Management Office
NASA/GSFC
Code 474
Greenbelt, MD 20771

Change History Log

Revision	Effective Date	Description of Changes (Reference the CCR & CCB/ERB Approve Date)
Rev -	August 8, 2013	This version incorporates 474-CCR-13-1121 which was approved by the JPSS Ground ERB on the effective date shown.
A	Jan 23, 2014	This version incorporates 474-CCR-13-1429 which was approved by the JPSS Ground ERB on the effective date shown.
A1	Oct 23, 2014	This version incorporates 474-CCR-14-2091 which was approved by the JPSS Ground ERB for CO10 on the effective date shown.
B	Oct 23, 2014	This version incorporates 474-CCR-14-1721, 474-CCR-14-1741, 474-CCR-14-1793, 474-CCR-14-1781 and 474-CCR-14-2075 which was approved by JPSS Ground ERB on the effective date shown.
C	Feb 12, 2016	This version incorporates 474-CCR-14-2110, 474-CCR-15-2452, 474-CCR-15-2480, 474-CCR-15-2657, and 474-CCR-16-2779 which was approved by JPSS Ground ERB on the effective date shown.
0200D	Sep 22, 2016	This version incorporates 474-CCR-16-2939 and 474-CCR-16-3049 which was approved by JPSS Ground ERB on the effective date shown.

Table of TBDs/TBRs

TBx	Type	ID	Text	Action
None				

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1 Introduction

The Joint Polar Satellite System (JPSS) is the National Oceanic and Atmospheric Administration's (NOAA) next-generation operational Earth observation program that acquires and distributes global environmental data primarily from multiple polar-orbiting satellites. The program plays a critical role in NOAA's mission to understand and predict changes in weather, climate, oceans and coasts, and the space environment, which support the Nation's economy and protect lives and property. The first JPSS satellite mission, the Suomi National Polar-orbiting Partnership (S-NPP) satellite, successfully launched in October 2011. S-NPP, along with the legacy NOAA Polar Operational Environmental Satellites (POES), provides continuous environmental observations. Two JPSS satellites will follow S-NPP: JPSS-1, planned for launch in fiscal year (FY) 2017, with JPSS-2 to follow in FY2021. In the future, the JPSS Polar Follow-On (PFO) provides for two additional missions, JPSS-3 and JPSS-4, as follow-on to the JPSS-2 mission to extend the JPSS Program lifecycle out to 2038.

In addition to the JPSS Program's own satellites operating in the 1330 (±10) Local Time of the Ascending Node (LTAN) orbit, NOAA also leverages mission partner assets for complete global coverage. These partner assets include the Department of Defense (DoD) Defense Meteorological Satellite Program (DMSP) operational weather satellites (in the 1730 - 1930 LTAN orbit), the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) Meteorological Operational (Metop) satellites (in the 2130 LTAN orbit) and the Japanese Aerospace Exploration Agency (JAXA) Global Change Observation Mission-Water (GCOM-W) satellite (in the 1330 LTAN orbit). JPSS routes Metop data from McMurdo Station, Antarctica to the EUMETSAT facility in Darmstadt, Germany and EUMETSAT, in turn, provides Metop data to NOAA. For GCOM, JPSS routes the GCOM-W data from Svalbard, Norway to the NOAA Satellite Operations Facility (NSOF) in Suitland, MD, processes GCOM-W data and delivers GCOM-W products to the JPSS users who have JAXA permissions.

Additionally, the JPSS Program provides data acquisition and routing support to the DMSP and the WindSat Coriolis Program. JPSS routes DMSP data from McMurdo Station to the 557th Weather Wing at Offutt Air Force Base in Omaha, NE. After processing, the 557th releases the DMSP data for public consumption over the Internet via the National Geophysical Data Center in Boulder, CO. The JPSS Program provides data routing support to the National Science Foundation (NSF), as well as the National Aeronautics and Space Administration (NASA) Space Communications and Navigation (SCaN)-supported missions, which include the Earth Observing System (EOS). As part of the agreements for the use of McMurdo Station, JPSS provides communications/network services for the NSF between McMurdo Station, Antarctica and Centennial, Colorado.

As a multi-mission ground infrastructure, the JPSS Ground System supports the heterogeneous constellation of the before-mentioned polar-orbiting satellites both within and outside the JPSS Program through a comprehensive set of services as listed in Table 1-1.

Table: 1-1 JPSS Ground System Services

Service	Description
Enterprise Management and Ground Operations	Provides mission management, mission operations, ground operations, contingency management and system sustainment
Flight Operations	Provides launch support and early orbit operations, telemetry and commanding, orbital operations, mission data playback, payload support, flight software upgrade, flight vehicle simulation, and disposal at the end of mission life
Data Acquisition	Provides space/ground communications for acquiring mission data
Data Routing	Provides routing of telemetry, mission and/or operations data through JPSS' global data network
Data Product Generation	Provides the processing of mission data to generate and distribute raw, sensor, environmental, and ancillary data products
Data Product Calibration and Validation	Provides calibration and validation of the data products
Field Terminal Support	Provides development and operational support to the Field Terminal customers

1.1 Identification

This SRS provides requirements for the VIIRS Vegetation Index EDR, containing top-of-atmosphere normalized difference vegetation index (NDVI), top-of-canopy NDVI, and top-of-canopy enhanced vegetation index (EVI). Vegetation indices have both qualitative and quantitative applications. Qualitatively, they provide a means of separating vegetation from other surface types, and they also give a general indication of the "greenness" within a given region - a combined measure of the health, density, and type of vegetation present. If retrievals are made consistently, adjusted for the bidirectional reflectance distribution function and atmospheric effects, the changes in vegetation indices can be analyzed quantitatively, both seasonally and in the longer term. Vegetation indices can also be used to estimate real world quantities such as leaf area index (LAI) and chlorophyll absorption. These parameters may be used as inputs to biogeochemical cycle models.

1.2 Algorithm Overview

The vegetation indices are produced from VIIRS visible and near-IR reflective bands. The top-of-atmosphere NDVI is obtained from a normalized difference of I1 and I2. The top-of-canopy EVI is a refined index incorporating I1, I2, M3 as well as parameterizations of soil and atmospheric effects. The top-of-canopy NDVI is a new output for JPSS-1.

The worth of an operational vegetation index product has already been demonstrated with the heritage of the NDVI. The NDVI forms the central foundation of the Global Vegetation Index (GVI) product maintained by the National Oceanic and Atmospheric Administration (NOAA).

The VIIRS Vegetation Index (VVI) shall consist of several output products. In addition to meeting the requirements presented in the VIIRS sensor requirements, there are six primary scientific objectives underlying the retrieval of the VVI products:

1. To provide a global database of accurately measured vegetation indices, leaf area index (LAI), fraction of absorbed photosynthetically active radiation (FPAR), net photosynthesis (PSN), and annual net primary production (NPP) which can be utilized to conduct studies of the spatial and temporal variability of vegetation

2. To provide regional data of accurately measured vegetation indices, LAI, FPAR, PSN, and NPP which can be used to further the understanding of vegetation-related processes and the coupling of vegetation with local and large scale climate

3. To provide accurate inputs for the continual production of land cover and land cover change maps at a spatial scale sufficient to detect the effects of droughts, floods, fires, and anthropogenic activity.

4. To provide accurate inputs for the calculation of surface wetness or soil moisture as a derived VIIRS product.

5. To continue the climatology of vegetation indices which has been built upon Advanced Very High Resolution Radiometer (AVHRR) NDVI products and further enhanced by data from the Moderate Resolution Imaging Spectroradiometer (MODIS)

6. To provide biophysical parameters which are of sufficient quality to enhance the performance of biogeochemical cycle models.

1.3 Document Overview

Section	Description
Section 1	Introduction - Provides a brief overview of the JPSS Ground System and the relevant algorithm, as reference material only.
Section 2	Related Documentation - Lists related documents and identifies them as Parent, Applicable, or Information Documents such as, MOAs, MOUs, technical implementation agreements, as well as Data Format specifications. This section also establishes an order of precedence in the event of conflict between two or more documents.
Section 3	Algorithm Requirements - Provides a summary of the science requirements for the products covered by this volume.
Appendix A	Requirements Attributes - Provides the mapping of requirements to verification methodology and attributes.

2 Related Documentation

The latest JPSS documents can be obtained from URL: https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm. JPSS Project documents have a document number starting with 470, 472 or 474 indicating the governing Configuration Control Board (CCB) (Program, Flight, or Ground) that has the control authority of the document.

2.1 Parent Documents

The following reference document(s) is (are) the Parent Document(s) from which this document has been derived. Any modification to a Parent Document will be reviewed to identify the impact upon this document. In the event of a conflict between a Parent Document and the content of this document, the JPSS Program Configuration Change Board has the final authority for conflict resolution.

Doc. No.	Document Title
470-00067	Joint Polar Satellite System (JPSS) Ground System Requirements Document (GSRD)
470-00067-02	Joint Polar Satellite System (JPSS) Ground System Requirements Document (GSRD), Volume 2 - Science Product Specification
474-00448-01-01	Joint Polar Satellite System (JPSS) Algorithm Specification Volume I: Software Requirements Specification (SRS) for the Common Algorithms

2.2 Applicable Documents

The following document(s) is (are) the Applicable Document(s) from which this document has been derived. Any modification to an Applicable Document will be reviewed to identify the impact upon this document. In the event of conflict between an Applicable Document and the content of this document, the JPSS Program Configuration Change Board has the final authority for conflict resolution.

Doc. No.	Document Title
D0001-M01-S01-025	Joint Polar Satellite System (JPSS) VIIRS Vegetation Index (VVI) Algorithm Theoretical Basis Document (ATBD)
474-00448-02-18	Joint Polar Satellite System (JPSS) Algorithm Specification Volume II: Data Dictionary for the Vegetation Index
474-00448-04-18	Joint Polar Satellite System (JPSS) Algorithm Specification Volume IV: Software Requirements Specification Parameter File (SRSPF) for the Vegetation Index

2.3 Information Documents

The following documents are referenced herein and amplify or clarify the information presented in this document. These documents are not binding on the content of this document.

Doc. No.	Document Title
474-00333	Joint Polar Satellite System (JPSS) Ground System (GS) Architecture Description Document (ADD)
474-00054	Joint Polar Satellite System (JPSS) Ground System (GS) Concept of Operations (ConOps)

Doc. No.	Document Title
470-00041	Joint Polar Satellite System (JPSS) Program Lexicon
474-00448-03-18	Joint Polar Satellite System (JPSS) Algorithm Specification Volume III: Operational Algorithm Description (OAD) for the Vegetation Index
429-05-02-42	Joint Polar Satellite System (JPSS) Mission Data Format Control Book for NPP
472-00251	Joint Polar Satellite System (JPSS) Mission Data Format Control Book for JPSS-1

3 Algorithm Requirements

3.1 States and Modes

3.1.1 Normal Mode Performance

SRS.01.18_181 The Vegetation Index EDR algorithms shall calculate the vegetation indices with a horizontal cell size (HCS) of 0.4 km and measure the performance with a HCS of 4.0 km.

Rationale: The horizontal cell size (HCS) was flowed down from the Level 1 and Level 2 documents. The Vegetation Index product is generated at the 0.4 km pixel resolution but the performance of the product is to be met at the HCS of 4 km. The VI product uses an average of 100 pixels.

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

SRS.01.18_182 The Vegetation Index EDR algorithms shall calculate the vegetation indices with a 3-sigma mapping uncertainty of 4 km.

Rationale: The mapping uncertainty was flowed down from the Level 1 and Level 2 documents.

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

SRS.01.18_183 The Vegetation Index EDR algorithm shall calculate the TOA NDVI with a measurement accuracy of 0.05 NDVI units.

Rationale: The measurement accuracy was flowed down from the Level 1 and Level 2 documents.

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

SRS.01.18_184 The Vegetation Index EDR algorithm shall calculate the TOA NDVI with a measurement precision of 0.04 NDVI units.

Rationale: The measurement precision was flowed down from the Level 1 and Level 2 documents.

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

SRS.01.18_185 The Vegetation Index EDR algorithm shall calculate the TOC EVI with a measurement accuracy of 0.05 EVI units.

Rationale: The measurement accuracy was flowed down from the Level 1 and Level 2 documents.

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

SRS.01.18_186 The Vegetation Index EDR algorithm shall calculate the TOC EVI with a measurement precision of 0.04 EVI units.

Rationale: The measurement precision was flowed down from the Level 1 and Level 2 documents.

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

SRS.01.18_187 The Vegetation Index EDR software shall process for vegetation index product generation all available SDR data with available refresh and coverage rates.

Rationale: The EDR should be as complete as the data available can make it.

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

SRS.01.18_246 The Vegetation Index EDR algorithm shall calculate the TOC NDVI with a measurement accuracy of 0.05 NDVI units.

Rationale: The measurement accuracy was flowed down from the Level 1 and Level 2 documents.

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

SRS.01.18_247 The Vegetation Index EDR algorithm shall calculate the TOC NDVI with a measurement precision of 0.04 NDVI units.

Rationale: The measurement precision was flowed down from the Level 1 and Level 2 documents.

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

3.1.2 Graceful Degradation Mode Performance

Not applicable.

3.2 Algorithm Functional Requirements

3.2.1 Product Production Requirements

SRS.01.18_174 The Vegetation Index EDR software shall incorporate a computing algorithm provided for top-of-atmosphere normalized-difference vegetation index (TOA NDVI).

Rationale: The EDR software through its computing algorithm must produce TOA NDVI in accordance with the JPSS VIIRS Vegetation Index ATBD (D0001-M01-S01-025).

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

SRS.01.18_175 The Vegetation Index EDR software shall incorporate a computing algorithm provided for top-of-canopy enhanced vegetation index (TOC EVI).

Rationale: The EDR software through its computing algorithm must produce TOC EVI in accordance with the JPSS VIIRS Vegetation Index ATBD (D0001-M01-S01-025).

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

SRS.01.18_248 The Vegetation Index EDR software shall incorporate a computing algorithm provided for top-of-canopy normalized-difference vegetation index (TOC NDVI).

Rationale: The EDR software through its computing algorithm must produce TOC NDVI in accordance with the JPSS VIIRS Vegetation Index ATBD (D0001-M01-S01-025).

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

3.2.2 Algorithm Science Requirements

Not applicable.

3.2.3 Algorithm Exception Handling

SRS.01.18_176 The Vegetation Index EDR software shall set each <FillField> to <FillValue> according to <FillCondition> specified in the JPSS Algorithm Specification Volume IV: SRSPF for the Vegetation Index, (474-00448-04-18) <VegIndexEDR><fill>.

Rationale: The SDR software through its computing algorithm must fill the Vegetation Index EDR values based on the established fill conditions to satisfy exclusion and fill conditions.

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

3.3 External Interfaces

3.3.1 Inputs

SRS.01.18_179 The Vegetation Index EDR software shall incorporate inputs per Table 3-1.

Rationale: The EDR generation software must be able to receive and process the resource interaction items shown in Table 3-1 in order to produce the intended Vegetation Index products.

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

SRS.01.18_249 The Vegetation Index EDR software shall ingest tables and coefficients formatted in accordance with Section 7 of the JPSS Algorithm Specification Vol II: Data Dictionary for Vegetation Index (474-00448-02-18).

Rationale: This defines the formats for Lookup Tables, and Processing Coefficients for input into the algorithm module.

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

Table 3-1 and Figure 3-1 are best viewed together since they describe the processes governed by this SRS in different ways. The figure diagrams the data flowing into, out of, and within the code governed by this SRS. The table lists these same data interactions as well as all downstream dependencies for outputs from this SRS.

Each row in the table describes a single software interaction - data flowing from one software item to another. The data is listed in the first column. The second and third column includes short name and the mnemonic for the data. Blanks indicate there is no mnemonic. The fourth (Source SRS) and fifth (Receiving SRS) columns contain the SRS that generates the data product(s) in the first column, and the SRS that receives those products. The final two columns (Sending Function and Receiving Function) contain the actual function name in Algorithm Development

Library (ADL) that produces those products, and the function that inputs those products. The SRS's titled "Ingest MSD" and "Store/Retrieve" are non-existent SRS's functioning as data handling for the IDPS. The software functions "Store Products" and "Retrieve Products" are similar non-existent functions that operate as IDPS data handling.

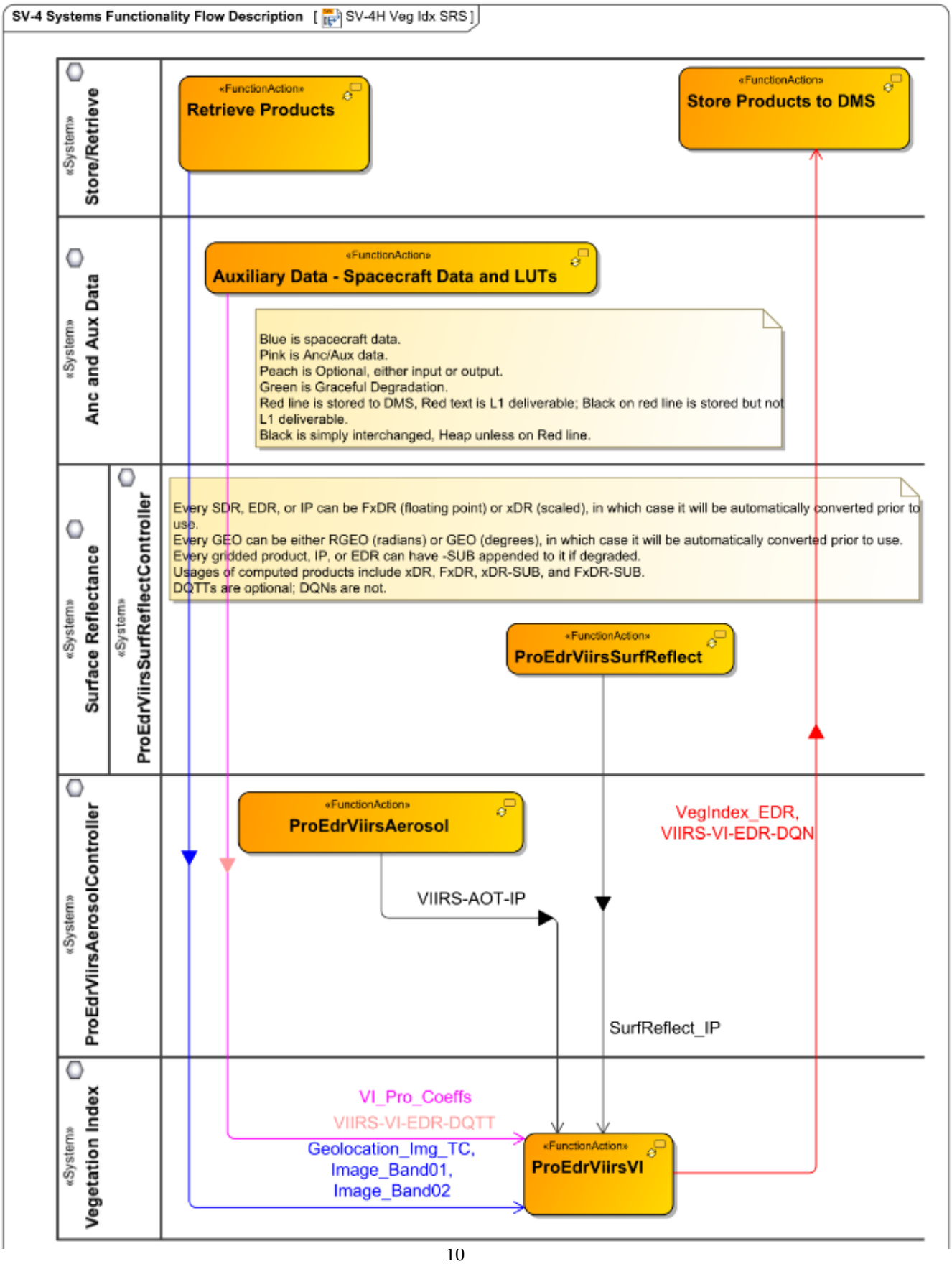

Figure: 3-1 Vegetation Index Data Flows

Table: 3-1 Systems Resource Flow Matrix: Vegetation Index

Data Product Name	Collection Short Name	Mnemonic	Sending SRS	Receiving SRS	Sending Function	Receiving Function
•Geolocation_Img_TC •Image_Band01 •Image_Band02	•VIIRS-IMG-RGEO-TC •VIIRS-I1-SDR •VIIRS-I2-SDR	•None •SDRE-VI01-C0030 •SDRE-VI02-C0030	Store/Retrieve (VIIRS SDR)	Vegetation Index	Retrieve Products	ProEdrViirsVI
•VI_Pro_Coeffs	•VIIRS-VI-EDR-AC	•DP_NU-LM2020-031	Anc and Aux Data	Vegetation Index	Auxiliary Data - Spacecraft Data and LUTs	ProEdrViirsVI
•VIIRS-VI-EDR-DQTT	•VIIRS-VI-EDR-DQTT	•DP_NU-LM2030-000	Anc and Aux Data	Vegetation Index	Auxiliary Data - Spacecraft Data and LUTs	ProEdrViirsVI
•VIIRS-AOT-IP	•VIIRS-Aeros-Opt-Thick-IP	•IMPI_VAOT_R0100	Aerosol Properties	Vegetation Index	ProEdrViirsAerosol	ProEdrViirsVI
•SurfReflect_IP	•VIIRS-Surf-Refl-IP	•IMPI_VISR_R0100	Surface Reflectance	Vegetation Index	ProEdrViirsSurfReflect	ProEdrViirsVI
•VegIndex_EDR •VIIRS-VI-EDR-DQN	•VIIRS-VI-EDR •VIIRS-VI-EDR-DQN	•EDRE-VRVI-C0030 •DP_NU-L00510-000	Vegetation Index	Store/Retrieve	ProEdrViirsVI	Store Products to DMS

3.3.2 Outputs

SRS.01.18_177 The Vegetation Index EDR software shall generate the Vegetation Index EDR product in conformance with the XML format file in Attachment A.1 of the JPSS Algorithm Specification Vol II: Data Dictionary for the Vegetation Index (474-00448-02-18).

Rationale: The product profile must conform to the XML format file.

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

SRS.01.18_178 The Vegetation Index EDR software shall use the terrain-corrected geolocation for the VIIRS I-band.

Rationale: The geolocation product must be generated with the EDR product.

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

3.4 Science Standards

Not applicable.

3.5 Metadata Output

Not applicable.

3.6 Quality Flag Content Requirements

SRS.01.18_188 The Vegetation Index EDR software shall report for each <FlagScope> quality flags using <FlagLogic> as specified in the JPSS Algorithm Specification Vol IV: SRSPF for the Vegetation Index (474-00448-04-18) <VegIndexEDR><QF>.

Rationale: Quality Flags must be generated based on the established flag conditions, logic, and format.

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

3.7 Data Quality Notification Requirements

SRS.01.18_180 The Vegetation Index EDR software shall send data quality notifications to the operator according to logic specified in the JPSS Algorithm Specification Vol IV: SRSPF for the Vegetation Index (474-00448-04-18) <VegIndexEDR> <notification>.

Rationale: Notifications must be generated and sent based on the established logic and conditions.

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

3.8 Adaptation

Not applicable.

3.9 Provenance Requirements

Not applicable.

3.10 Computer Software Requirements

Not applicable.

3.11 Software Quality Characteristics

Not applicable.

3.12 Design and Implementation Constraints

SRS.01.18_191 The JPSS Common Ground System shall execute the TOA NDVI algorithm.

Rationale: The CGS must incorporate algorithm changes that are supplied by the algorithm vendor.

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

SRS.01.18_192 The JPSS Common Ground System shall execute the TOC EVI algorithm.

Rationale: The CGS must incorporate algorithm changes that are supplied by the algorithm vendor.

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

SRS.01.18_250 The JPSS Common Ground System shall execute the TOC NDVI algorithm.

Rationale: The CGS must incorporate algorithm changes that are supplied by the algorithm vendor.

Mission Effectivity: S-NPP, JPSS-1, JPSS-2

3.13 Personnel Related Requirements

Not applicable.

3.14 Training Requirements

Not applicable.

3.15 Logistics Related requirements

Not applicable.

3.16 Other Requirements

Not applicable.

3.17 Packaging Requirements

Not applicable.

3.18 Precedence and Criticality

Not applicable.

Appendix A. Requirements Attributes

The Requirements Attributes Table lists each requirement with CM-controlled attributes including requirement type, mission effectivity, requirement allocation(s), block start and end, method(s) for verifying each requirement, etc.

Req ID	SRS 18 - Vegetation Index	Level 3 Type	Product Type	Mission Effectivity	Allocated To	Block Start	Block End	Block 2.0.0 VM	Block 2.1.0 VM	Block 2.2.0 VM
SRS.01.18_181	The Vegetation Index EDR algorithms shall calculate the vegetation indices with a horizontal cell size (HCS) of 0.4 km and measure the performance with a HCS of 4.0 km.	P	EDR	S-NPP JPSS-1 JPSS-2	algorithm provider	2.0.0	3.0.0	Test	NA	NA
SRS.01.18_182	The Vegetation Index EDR algorithms shall calculate the vegetation indices with a 3-sigma mapping uncertainty of 4 km.	P	EDR	S-NPP JPSS-1 JPSS-2	algorithm provider	2.0.0	3.0.0	Test	NA	NA
SRS.01.18_183	The Vegetation Index EDR algorithm shall calculate the TOA NDVI with a measurement accuracy of 0.05 NDVI units.	P	EDR	S-NPP JPSS-1 JPSS-2	algorithm provider	2.0.0	3.0.0	Test	NA	NA
SRS.01.18_184	The Vegetation Index EDR algorithm shall calculate the TOA NDVI with a measurement precision of 0.04 NDVI units.	P	EDR	S-NPP JPSS-1 JPSS-2	algorithm provider	2.0.0	3.0.0	Test	NA	NA
SRS.01.18_185	The Vegetation Index EDR algorithm shall calculate the TOC EVI with a measurement accuracy of 0.05 EVI units.	P	EDR	S-NPP JPSS-1 JPSS-2	algorithm provider	2.0.0	3.0.0	Test	NA	NA
SRS.01.18_186	The Vegetation Index EDR algorithm shall calculate the TOC EVI with a measurement precision of 0.04 EVI units.	P	EDR	S-NPP JPSS-1 JPSS-2	algorithm provider	2.0.0	3.0.0	Test	NA	NA
SRS.01.18_187	The Vegetation Index EDR software shall process for vegetation index product generation all available SDR data with available refresh and coverage rates.	P	EDR	S-NPP JPSS-1 JPSS-2	algorithm provider	2.0.0	3.0.0	Test	NA	NA
SRS.01.18_246	The Vegetation Index EDR algorithm shall calculate the TOC NDVI with a	P	EDR	S-NPP JPSS-1	algorithm provider	2.0.0	3.0.0	Test	NA	NA

Req ID	SRS 18 - Vegetation Index	Level 3 Type	Product Type	Mission Effectivity	Allocated To	Block Start	Block End	Block 2.0.0 VM	Block 2.1.0 VM	Block 2.2.0 VM
	measurement accuracy of 0.05 NDVI units.			JPSS-2						
SRS.01.18_247	The Vegetation Index EDR algorithm shall calculate the TOC NDVI with a measurement precision of 0.04 NDVI units.	P	EDR	S-NPP JPSS-1 JPSS-2	algorithm provider	2.0.0	3.0.0	Test	NA	NA
SRS.01.18_174	The Vegetation Index EDR software shall incorporate a computing algorithm provided for top-of-atmosphere normalized-difference vegetation index (TOA NDVI).	Ap	EDR	S-NPP JPSS-1 JPSS-2	algorithm provider	2.0.0	3.0.0	Inspection	NA	NA
SRS.01.18_175	The Vegetation Index EDR software shall incorporate a computing algorithm provided for top-of-canopy enhanced vegetation index (TOC EVI).	Ap	EDR	S-NPP JPSS-1 JPSS-2	algorithm provider	2.0.0	3.0.0	Inspection	NA	NA
SRS.01.18_248	The Vegetation Index EDR software shall incorporate a computing algorithm provided for top-of-canopy normalized-difference vegetation index (TOC NDVI).	Ap-D	EDR	S-NPP JPSS-1 JPSS-2	algorithm provider	2.0.0	3.0.0	Inspection	NA	NA
SRS.01.18_176	The Vegetation Index EDR software shall set each <FillField> to <FillValue> according to <FillCondition> specified in the JPSS Algorithm Specification Volume IV: SRSPF for the Vegetation Index, (474-00448-04-18) <VegIndexEDR><fill>.	E	EDR	S-NPP JPSS-1 JPSS-2	CGS	2.0.0	3.0.0	Inspection	NA	NA
SRS.01.18_179	The Vegetation Index EDR software shall incorporate inputs per Table 3-1.	I	EDR	S-NPP JPSS-1 JPSS-2	CGS	2.0.0	3.0.0	Inspection	NA	NA
SRS.01.18_249	The Vegetation Index EDR software shall ingest tables and coefficients formatted in accordance with Section 7 of the JPSS Algorithm Specification Vol II: Data Dictionary for Vegetation Index	Ft	EDR	S-NPP JPSS-1 JPSS-2	CGS	2.0.0	3.0.0	Inspection	NA	NA

Req ID	SRS 18 - Vegetation Index	Level 3 Type	Product Type	Mission Effectivity	Allocated To	Block Start	Block End	Block 2.0.0 VM	Block 2.1.0 VM	Block 2.2.0 VM
	(474-00448-02-18).									
SRS.01.18_177	The Vegetation Index EDR software shall generate the Vegetation Index EDR product in conformance with the XML format file in Attachment A.1 of the JPSS Algorithm Specification Vol II: Data Dictionary for the Vegetation Index (474-00448-02-18).	F	EDR	S-NPP JPSS-1 JPSS-2	CGS	2.0.0	3.0.0	Inspection	NA	NA
SRS.01.18_178	The Vegetation Index EDR software shall use the terrain-corrected geolocation for the VIIRS I-band.	Fg	GEO	S-NPP JPSS-1 JPSS-2	CGS	2.0.0	3.0.0	Inspection	NA	NA
SRS.01.18_188	The Vegetation Index EDR software shall report for each <FlagScope> quality flags using <FlagLogic> as specified in the JPSS Algorithm Specification Vol IV: SRSPF for the Vegetation Index (474-00448-04-18) <VegIndexEDR><QF>.	Q	EDR	S-NPP JPSS-1 JPSS-2	CGS	2.0.0	3.0.0	Inspection	NA	NA
SRS.01.18_180	The Vegetation Index EDR software shall send data quality notifications to the operator according to logic specified in the JPSS Algorithm Specification Vol IV: SRSPF for the Vegetation Index (474-00448-04-18) <VegIndexEDR> <notification>.	N	EDR	S-NPP JPSS-1 JPSS-2	CGS	2.0.0	3.0.0	Inspection	NA	NA
SRS.01.18_191	The JPSS Common Ground System shall execute the TOA NDVI algorithm.	Ai	EDR	S-NPP JPSS-1 JPSS-2	CGS	2.0.0	3.0.0	Inspection	NA	NA
SRS.01.18_192	The JPSS Common Ground System shall execute the TOC EVI algorithm.	Ai	EDR	S-NPP JPSS-1 JPSS-2	CGS	2.0.0	3.0.0	Inspection	NA	NA
SRS.01.18_250	The JPSS Common Ground System shall execute the TOC NDVI algorithm.	Ai	EDR	S-NPP JPSS-1 JPSS-2	CGS	2.0.0	3.0.0	Inspection	NA	NA